

IN THE BACKGROUND OF THE INVENTION

operation while the circuit still has a functional switch since the faulty switch(s) could be the one the feedback uses to alter operation.

U.S. Pat. No. 5,760,493 addresses the problem of improper transducer operation in appliances. The method does not detect faults. The intention of U.S. Pat. No. 5,760,493 is to limit improper transducer operation should one of its switches fail. In this approach two switches must be closed to permit transducer operation. If one switch shorts the transducer is erroneously active when the functional switch is closed to operate another transducer. This method only prevents improper operation during part of a cycle. Since faults are not detected, operation continues allowing the possibility of additional faults developing, further compromising safe operation.

U.S. Pat. No. 5,760,493 points out that switching faults are not uncommon when driving large inductive loads. The appliance industry has relied on a plurality of switches to ensure that operation of transducers is stopped at least at the end of a cycle. This plurality of switches includes overrides which directly switch the transducers. However the plurality of switches adds to the cost and reduces overall system reliability.

U.S. Pat. No. 4,866,955 uses switching means to prevent an appliance from operating if its door or lid switch has not been opened since the end of the last cycle. The intended state of the switch is not known, it is assumed that the switch must open between cycles. The control is therefore incapable of stopping the appliance should the switch fail to open as intended during a cycle.

The prior art shown in U.S. Pat. Nos. 3,367,089, 4,307,392, 4,951,037, shows methods of detecting switching faults that affect transducers. The transducers are display elements. U.S. Pat. Nos. 4,307,392 and 4,951,037 determine the functionality of the transducer and any fault causing any switch to be in an erroneous state. U.S. Pat. No. 3,367,089 only detects faults affecting the switches. These approaches apply only to switching means operated solely by the control.

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